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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,140	03/01/2002	William A. Crossland	124-931	3967

7590 06/12/2003

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EXAMINER

NGUYEN, DAO H

ART UNIT PAPER NUMBER

2818

DATE MAILED: 06/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/085,140

Applicant(s)

CROSSLAND ET AL.

Examiner

Dao H Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

1. In response to the communications dated 03/01/2002 through 09/19/2002, claims 1-10 are active in this application.

### **Oath / Declaration**

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEM §§ 602.01 and 602.02.

The oath or declaration is defective because: It does not include the signature of the second inventor.

### **Foreign Priority**

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### **Drawings**

4. The drawings are objected to for the following reasons.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first electrodes of

the array of addressable active elements on a semiconductor substrate, as stated in claims 1-3, 7 and 8, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Moreover, none of the drawings shows an array of addressable active elements on a semiconductor substrate. As shown in figure 2, for example, the array of active element 4 is formed in the active silicon backplane, not on a substrate.

In addition, page 12, lines 25-26, of the specification cites that "Front electrode 6 comprises a generally rectangular planar glass or silica substrate 7 coated on *its* underside". This is not clear. What does "its" refer to? Does "its" refer to the front electrode 6? If so, then the substrate 7 would be coated on the underside of the electrode 6. Then, logically, the electrode 6 must be above the substrate! As shown in figure 1, none of the electrode(s) locate(s) on the substrate.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "6" and "7" have both been used to designate the same component.

A proposed drawing correction or corrected drawings, showing changes in red ink, are required in reply to the Office Action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. However, formal correction of the noted defect(s) can be deferred until the application is allowed by the examiner (see MPEP § 608.02v).

### **Specification**

5. The specification is objected to for the following reason:

The application is informal in the arrangement of the specification.

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, each of the lettered items should appear in upper case, without underling or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-Reference to Related Applications.
- (c) Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc (see 37 CFR 1.52(e)(5)).
- (e) Background of the Invention.
  - 1. Field of the Invention.
  - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (i) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing, if on paper (see 37 CFR 1.821-1.825).

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

### **Claim Objections**

6. Claim 8 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 7. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### **Claim Rejections - 35 USC § 112**

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-10 rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, and 2, the limitations “a reverse biased capacitative diode” is not clearly defined and distinctly pointed out the subject matter which is claimed as the Applicant’s invention. What is a capacitative diode?

In claim 1, line 3, the phrase “at least part of the region beneath a said first electrode” should be changed to “at least part of the region beneath said first electrodes” since there are more than one first electrode and the first electrodes are already defined in lines 2-3. Similar errors are found in claims 2, 3, 7, and 8.

Claims 4-6, 9, and 10 depend from rejected claim 1 and include all of the limitations of claim 1 thereby rendering these dependent claims indefinite.

### **Claim Rejections - 35 USC § 102**

9. The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 2, 4-6, 9, and 10 are rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 5,223,919 to Whight et al.

Regarding claim 1, Whight discloses a semiconductor active backplane, as shown in figures 1-4, including an array of addressable active elements on a semiconductor substrate 4 for selectively energizing respective first electrodes 12 of the array, wherein at least part of the region beneath the first electrode 12 is formed as a depletion region 5 whereby in use it acts as a reverse biased diode characterized in that at least one charge trapping implant 6" is provided adjacent but spaced from the

depletion region 5. See figure 2, column 3, line 53 to column 4, line 62, and column 7, lines 1-66, column 1, lines 33-54.

Regarding claim 2, discloses a semiconductor active backplane comprising all the claimed limitations. See column 1, lines 33-54.

Regarding claim 4, Whight discloses the semiconductor active backplane wherein there is a single active element at each location of the array provided by a single transistor. See figure 2 and column 7, lines 1-66.

Regarding claim 5, Whight discloses the semiconductor active backplane wherein the active element(s) have a MOS construction. See figure 2.

Regarding claim 6, Whight discloses the semiconductor active backplane wherein substantially the whole of each active element is covered by a metallic conductor, or a pair of metallic conductors. See figures 1-4.

Regarding claim 9, Whight discloses the backplane wherein the array of active elements is covered by an insulating layer 10, each of the active element being connected to a metal electrode 12 on the insulating layer 10, the array of the metal electrodes thus formed covering more than 65% of the area of the array. See figures 1-4 of Whight.



Regarding claim 10, Whight discloses the backplane wherein the array of the metal electrodes covers more than 80% of the area of the array of addressable active elements. See figures 1-4.

11. Claim 2 is rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 4,816,890 to Ouchi et al.

Regarding claim 2, Ouchi discloses a semiconductor active backplane, as shown in figures 1-6, including an array of addressable active elements on a semiconductor substrate 11 for selectively energizing respective first electrodes 19 of the array, wherein at least part of the region beneath the first electrodes 19 is formed as a depletion region 26 whereby in use it acts as a reverse biased diode characterized in that a guard ring 25 is provided around the periphery of the depletion region 26 to prevent or hinder charge carriers from crossing between the depletion region 26 and the rest of the substrate 11. See figures 1, 2, and column 2, line 25 to column 3, line 16.

12. Claim 3 is rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 5,214,496 to Sunami et al.

Regarding claim 3, Sunami discloses a semiconductor active backplane, as shown in figures 10-13, including an array of addressable active elements 15 on a semiconductor substrate 10 for selectively energizing respective first electrodes (horizontal portion of 19 which connect to the source/drain 15) of the array,

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characterized in that at least part of the region beneath the first electrodes is provided by individual capacitor plates (19, 8) formed beneath the electrodes, on coupled to the substrate (electrode 8) and the other coupled to the electrodes (electrode 19).

13. Claim 7 is rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 6,512,263 to Yuan et al.

Regarding claim 7, Yuan discloses a semiconductor active backplane, as shown in figures 3, and 15, including an array of addressable active element 101-103 on a semiconductor substrate 45 for energizing respective first electrodes 49, 51, 53, and first and second orthogonal sets of addressing conductors (49, 51, 53) and (91-94), a respective pair of addressing conductors, one from each set, being associated with the addressing of a corresponding active element, characterized in that substantially the whole of each active element is covered by the addressing conductors in the form of a metallic conductor. See figures 3, 15.

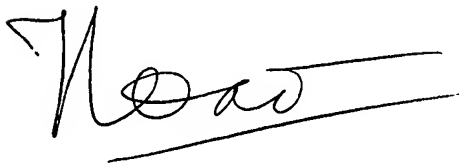
### **Conclusion**

14. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao H. Nguyen whose telephone number is (703) 305-1957. The examiner can normally be reached on Monday-Friday, 9:00 AM – 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (703) 308 - 4910. The fax numbers for Customer Service is (703) 872-9317, for the organization where this application proceeding is assigned is (703) 872-9318 for regular (Before Final) communications or (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Dao H. Nguyen  
Art Unit 2818  
May 14, 2003



HOAI HO  
PRIMARY EXAMINER